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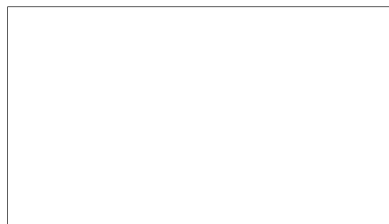
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Incorporate, General

MEMORANDUM FOR THE RECORD

SUBJECT: Testing of Flares

1. During the evening of 24 October tests were conducted to observe the appearance of commercially available red and yellow signal flares after dark. The conditions under which the flares were placed for test varied so as to simulate conditions for which they might be used in the field. The following persons were present at the test:



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2. A helicopter (Bell Trooper) was used as the test vehicle for flying over the emplaced burning flares. This helicopter was flying at an altitude of 750 feet and a speed of 85 mph. Six fly overs were made with the flares emplaced under different conditions for each pass. These conditions were as follows:

- A. Fly over with Red Flares on top of ground.
- B. Fly over with Yellow Flares on top of ground.
- C. Fly over with Red Flares in Pits.
- D. Fly over with Yellow Flares in Pits.
- E. Fly over with Red Flares in Pits with Foil.
- F. Fly over with Yellow Flares in Pits with Foil.

3. The flares being tested were the Standard Red, Olin Mathieson Red, Bristol Red, Kilgore Red, Bristol Yellow, and Kilgore Yellow. The results of the tests were as follows:

Test #1

The Standard Red, Bristol Red, and Kilgore Red were very much the same in appearance. The Olin Mathieson Red did not give off the amount of glow as the other three.

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Test #2

The Kilgore Yellow was very easy to spot and gave off a good glow. The Bristol Yellow was very poor in appearance and had a reddish tint.

Test #3

In this test the flares were very difficult to spot until the helicopter was almost directly over top of the flares. In this position the Standard Red and the Kilgore Red appeared to be best.

Test #4

These flares were not detectable until the helicopter was directly over the pits. There didn't appear to be too much difference in the two flares.

Test #5

Using the foil in the pits made the flares much easier to see, but not quite as visible as the flares on the surface. The Olin Mathieson Red and Bristol Red appeared to be the most visible in this test while the Kilgore Red was the poorest.

Test #6

The results in this test were the same as the previous fly over. In this test the Kilgore Yellow appeared to be much better than the Bristol Yellow.

4. At the same time as the aerial observation tests ground observations were also made. In all cases for either observations the yellow flares were less distinguishable than the red flares. The ground observation results were as follows:

Test #1

The order of best appearance was Standard Red, Bristol Red, Kilgore Red, Olin Mathieson Red.

Test #2

The Kilgore Yellow was much better than the Bristol Yellow. Once again the Bristol Yellow had a reddish tint to it.

Test #3

All the flares appeared good from the ground with a vague glow over each of the pits. Any uprights nearby were illuminated and should be eliminated wherever possible.

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Test #4

The yellow flares were inconspicuous from the ground.

Test #5

There was some reflection from the smoke and the flow was a little more conspicuous than the pits without foil.

Test #6

About the same as Test #5, perhaps a little more inconspicuous.



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